

There are a few moments in history where a major advance in the arts is also an advance in engineering and directly responsible for a major acceleration of popular culture. The invention of the Paik/Abe Synthesizer is one of those perfect moments.

The Paik/Abe Synthesizer is the first machine designed to distort existing video. It was built in Boston at WGBH-TV in 1969 by Nam June Paik and Shuya Abe. At the time Paik was an artist in residence at the public television station. He had come the previous year as part of a contingent of artists invited to create a revolutionary broadcast television show called “The Medium Is The Medium.” It grew out of an exhibition at the Howard Wise gallery in New York. The idea was to have these new video artists take over a television broadcast studio to make video art. The producers Pat Marx and Ann Gresser successfully approached the Ford Foundation for funding. But at the time broadcast television was an insular institution, to say the least, and finding a television station that would allow these artists in was difficult.

Marx and Gresser had seen an article in Newsweek about a TV show on Boston public television called “What’s Happening, Mr. Silver” produced by Fred Barzyk. This was a weekly program hosted by Tufts University professor David Silver. The episode mentioned in Newsweek was called “Madness and Intuition.” During the production of it, Barzyk recalled, “I used every film chain, every video tape machine, I had groups of thousands of slides being projected. I had a guy on a motorcycle circling two old people from a old people’s home. I had two guys sleeping in bed. I gave [director] Dave Atwood instructions that whenever anybody got bored they just yelled out and we would change to what ever else was there without rhyme or reason, assuming that everything would make sense by the time it all came out. Twenty two minutes into the show I got up and left. As director I just walked out. One lady called up [the station] afterwards and said, ‘Don’t ever do that again, you’ve given me brain cancer.’”

With this kind of creative exploration about the structure of television already in place, WGBH was recognized from the outside as a place where artists might be allowed some freedom to play. Barzyk, producer Olivia Tappen and Dave Atwood were invited to New York and arrived with 100 lbs of 2” inch tape of their work to show the Wise Gallery artists. Everyone got along and the artists came to Boston.

In March 1969, “The Medium Is The Medium” aired nationally featuring six artists, Allan Kaprow, Nam June Paik, Otto Piene, James Seawright, Thomas Tadlock and Aldo Tambellini. Each of them made a short video using WGBH equipment. Paik’s contribution, “Electronic Opera #1” pioneered the idea of interactive television in his by exhorting viewers to “close one eye” or “close one eye half way” and finally, “Turn off your television set”.

“Nam June Paik showed up in [rubber] boots and with about twenty old TV sets.” Barzyk remembers, “I asked him why he was wearing the boots and he said, ‘Oh, I get electrocuted otherwise.’ He asked if I could get a nude woman to dance over a picture of Richard Nixon. I went as far as I could on public television. I had a dancer who was willing to do it in pasties and a g-string. But that shook up the station too, because this was definitely not what they expected. However with the Ford Foundation supporting this show and getting national recognition they had to pay attention. Reluctantly, but they had to pay attention.”

Later Paik introduced Barzyk to Howard Klein at the Rockefeller Foundation, who had seen the importance of this new medium some time before. Klein had already worked with a number of artists and institutions, like Paik and KQED in San Francisco, funding video experimentation. When he added WGBH and later WNET in New York to the process, he was able to design an entire program, the Rockefeller Artists-In-Television Project, to cover the various grants. And Paik became a WGBH Rockefeller Artist-In-Television.

Barzyk recalls working with Paik in that summer of 1969, "Nam June's vision was immense. His language was somewhat limited and his communication with engineers (and his ideas had a lot to do with engineering) were threatening to a lot of people. Nam June had an engineer friend in Tokyo, Mr. Abe, and he came to me with an idea that he would create a machine for himself which would be away from the requirements of the [WGBH] engineers. I remember he and I had lunch with Michael Rice [president of WGBH] and we laid out this huge piece of paper which tried to describe the synthesizer and what it was like and what it was going to do. I don't think Michael really understood, but he knew that Nam June would be gone for three months and we got the money needed to send him to Tokyo and to develop and devise this thing and bring Mr. Abe to help set it up here in the United States." Paik returned from Japan in the spring of 1970 and made the synthesizer over the summer.

What Paik wanted to accomplish was to make video as malleable as paint. He realized that all the broadcast studio equipment in the world was still not enough to accomplish his vision of "video wallpaper. Nam June Paik saw television as the canvas for the next generation of electronic artists. The synthesizer itself was designed to do exactly what all the WGBH engineers prided themselves on avoiding. It contaminated the video signal. By wiring up seven old black and white surveillance cameras to a colorizer and scan modulator, Paik and Abe were able to distort the color and misshape the image on the television screen. In the early sixties, Paik had displayed old television sets with huge horseshoe magnets sitting on top. This wild distortion of the magnet on one TV was exactly the effect Paik wanted on everyone's TV. With the synthesizer, he was finally achieve it.

Paik himself described the Synthesizer; "Is sloppy machine, like me." The original Synthesizer is a jumble of old video equipment, that probably looked scavenged back in 1970. Starting with seven old Black and White surveillance cameras, the Synthesizer is a colorizer and scan modulator combined. Each of the seven video signals in passed through its own non-linear amplifier and then through a matrix into a RGB to NTSC color encoder. This meant that one camera acted as the red input, one green, one blue, one as red and green, one as red and blue, etc. Aiming the cameras at roughly the same object gave overlapping color images. David Atwood, who was Paik's roommate in Boston that summer, said simply, "The engineers hated the thing."

The Synthesizer debut in a four hour broadcast television show called "Video Commune - The Beatles from Beginning to End" on WGBH Ch. 44 on August 1, 1970. Paik took advantage of a licensing agreement that WGBH had which gave them rights to air all Beatles songs. So he created four hours of a wildly colorful broadcast performance to a soundtrack of Beatles music. Susan Dowling, later director of the New Television Workshop, described Video Commune as "All the images on the show - surreal landscapes (crushed tin foil), eerie abstractions (shaving cream), bursts of color (wrapping paper) - were transmogrified by the Synthesizer at the very moment of broadcast: "live" television at its most unexpected." Interspersed with the Synthesizer video and Beatles music were clips from a tape of Japanese television, in Japanese, with no subtitles. Viewers in Boston had never seen anything like it.

After Video Commune aired the engineers came out and said that, "You guys blew up the color filter on the Channel forty four transmitter and if we ever do this again, we have to have more control."

Later Paik left Boston and built more many Synthesizers, including ones for the Experimental Television Workshop in upstate New York and for WNET in New York City.

Atwood described his job as the mediator between the WGBH engineers and the Synthesizer. He tells the story about the Green Frog. In the Synthesizer room was a large container in the shape of a green frog. It contained numerous video cables of different lengths that he had collected around the station. After Paik

left, when artists like Ron Hays created a new show on the Synthesizer and it was scheduled to air the engineers would always say something like, “We can’t air that, its 60 degrees out of phase.” Atwood knew that by adding cable to the output of the Synthesizer, he could change the phase by 2 degrees a foot. So he would go into the Synthesizer room and pull thirty feet of cable out of the frog and add it to the output. Then he would return and say, “Look at the phase now, how is it?” The engineer would then have to air the work.

Today the original Synthesizer is the Kunsthalle in Bremen Germany, in a large frame built by Paik himself, which is covered by a jumble of vintage televisions which show the various videos made with the synthesizer and their date of production. Wulf Herzogenrath, director of the Bremen Kunsthalle explains that he insisted that the dates be there, so the MTV generation of kids who came into the room realized that these modern looking videos were made before they were born, not last week.

By exhibiting a simple machine this way, Herzogenrath showed that he understood the importance of the Paik /Abe Synthesizer to world culture in a way that few in Boston or the rest of the United States did. It represents the vision of an artist who sees a medium of communication and understands that to make art with it you must first subvert it. Until Nam June Paik the medium of worldwide broadcast television was the engineers temple. Artists were not invited. Yet by 1970, this “vast wasteland”, as it was called, had transformed our culture, becoming the most powerful form of communication in the world.

Paik revolutionized that. The handful of videos he made with the Synthesizer had an effect far beyond their audience. Suddenly the idea of video art made sense in a way that it hadn’t before. Video became a canvas that the artist could literally paint on. The freedom of creative thought that Paik’s creation spawned spread like wildfire. The Paik/Abe synthesizer and others like it were used by an entire generation of artists interested in the formal beauty of the abstract video image. Suddenly artists started inventing new electronic tools as fast as they needed them, twisting video signals through a whole new language of feedback and colorization, processing and disruption.

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